Amendments to the Claims

Please cancel claims 1-50.

Please add new claims 51 through and including 77:

51. (New) A SiAlON ceramic body made from a starting powder mixture that includes silicon nitride powder and one or more powders that provide aluminum, oxygen, nitrogen, and a rare earth to the SiAlON ceramic body, the SiAlON ceramic body comprising:

a two phase composite comprising an alpha prime SiAlON phase and a beta prime SiAlON phase, and the alpha prime SiAlON phase containing the rare earth therein;

the alpha prime SiAlON phase being present in an amount greater than or equal to about 20 weight percent of the two phase composite;

the starting silicon nitride powder comprises at least about 70 weight percent of the starting powder mixture, the silicon nitride powder in the starting powder mixture containing beta-silicon nitride powder wherein the beta-silicon nitride powder comprises less than or equal to about 1.6 weight percent of the starting silicon nitride powder; and

the SiAlON ceramic body having a Vickers hardness (18.5 Kg load) equal to or greater than about 16.5 GPa, and a fracture toughness (K_{IC}) equal to or greater than about 5.5 $MPam^{1/2}$.

52. (New) The SiAlON ceramic body of claim 51 wherein at least some of the silicon component of the alpha prime SiAlON phase originates form the silicon nitride powder in the starting powder mixture, and at least some of the silicon component of the beta prime SiAlON phase originates from the silicon nitride powder in the starting powder mixture.

53. (New) The SiAlON ceramic body of claim 51 having a Vickers hardness (18.5 Kg load) equal to at least about 17.5 GPa and a fracture

toughness as measured by the Evans & Charles method equal to at least about 6.0 $MPa \bullet m^{1/2}$.

54. (New) The SiAlON ceramic body of claim 51 having a Vickers hardness (18.5 Kg load) equal to at least about 18.5 GPa and a fracture toughness as measured by the Evans & Charles method equal to at least about 7.0 $MPa \bullet m^{1/2}$.

55. (New) The SiAlON ceramic body of claim 51 having a Vickers hardness (18.5 Kg load) equal to at least about 19.5 GPa and a fracture toughness as measured by the Evans & Charles method equal to at least about 8.0 $MPa \bullet m^{1/2}$.

56. (New) The SiAlON ceramic body of claim 51 wherein the beta prime SiAlON phase being of the formula $Si_{6-z}Al_zO_zN_{8-z}$ wherein z is greater than 0.3 and less than 1.5.

57. (New) The SiAlON ceramic body of claim 51 wherein z is greater than 0.7 and less than 1.5.

58. (New) The SiAlON ceramic body of claim 51 wherein z is greater than 0.3 and less than 0.6.

59. (New) The SiAlON ceramic body of claim 51 wherein the alpha prime SiAlON phase being present in an amount between about 60 weight percent and about 80 weight percent of the two phase composite.

60. (New) The SiAlON ceramic body of claim 51 wherein the alpha prime SiAlON phase being present in an amount between about 45 weight percent and about 85 weight percent of the two phase composite.

61. (New) The SiAlON ceramic body of claim 51 wherein the silicon nitride starting powder contains about zero weight percent beta silicon nitride.

62. (New) The SiAlON ceramic body of claim 51 wherein the SiAlON ceramic body further includes an integranular phase comprising one or more of a glassy phase and an integranular crystalline phase.

63. (New) The SiAlON ceramic body of claim 51 wherein the rare earth is selected from the group comprising ytterbium, erbium, thulium, scandium and lutetium.

64. (New) The SiAlON ceramic body of claim 51 wherein the rare earth comprises ytterbium.

65. (New) A ceramic body made from a starting powder mixture that includes silicon nitride powder, aluminum nitride powder, alumina powder, and ytterbium oxide powder, the ceramic body comprising:

a two phase composite comprising alpha prime SiAlON phase and beta prime SiAlON phase, and the alpha prime SiAlON phase containing ytterbium therein;

the alpha prime SiAlON phase being present in an amount between about 25 weight percent and about 50 weight percent of the two phase composite;

the sintered ceramic body having a fracture toughness (K_{IC}) of greater than or equal to about 6.0 $MPam^{1/2}$;

the sintered ceramic body having a Vickers hardness (18.5 kg load) of greater than or equal to about 17.0 GPa, and

the starting silicon nitride powder has less than or equal to about 1.6 weight percent beta-silicon nitride.

66. (New) The ceramic body of claim 65 wherein the content of the starting alumina powder being greater than the content of the starting aluminum nitride powder.

67. (New) The ceramic body of claim 65 wherein the starting silicon nitride powder contains about zero beta silicon nitride.

68. (New) The ceramic body of claim 65 having a fracture toughness as measured by the Evans & Charles method equal to at least about 7.0 $MPa \bullet m^{1/2}$.

69. (New) The ceramic body of claim 65 having a fracture toughness as measured by the Evans & Charles method equal to at least about 8.0 $MPa \bullet m^{1/2}$.

70. (New) The ceramic body of claim 65 wherein the beta prime SiAlON phase being of the formula $Si_{6-z}Al_zO_zN_{8-z}$ wherein z is greater than 0.3 and less than 1.5.

71. (New) The ceramic body of claim 70 wherein z is greater than 0.7 and less than 1.5.

72. (New) The ceramic body of claim 70 wherein z is greater than 0.3 and less than 0.6.

73. (New) A ceramic body made from a starting powder mixture that includes silicon nitride powder, ytterbium oxide powder, and at least one or more powders together containing aluminum, oxygen and nitrogen, the ceramic body comprising:

a two phase composite comprising alpha prime SiAlON phase and beta prime SiAlON phase, and the alpha prime phase containing ytterbium therein;

the alpha prime SiAlON phase being present in an amount greater than or equal to about 20 weight percent of the two phase composite;

at least some of the silicon component of the alpha prime SiAlON phase originates form the silicon nitride powder in the starting powder

mixture, and at least some of the silicon component of the beta prime SiAlON phase originates from the silicon nitride powder in the starting powder mixture;

the starting silicon nitride powder comprises at least about 70 weight percent of the starting powder mixture, the silicon nitride powder in the starting powder mixture containing beta-silicon nitride powder wherein the beta-silicon nitride powder comprises less than or equal to about 1.6 weight percent of the starting silicon nitride powder.

74. (New) The ceramic body of claim 73 wherein the starting silicon nitride powder contains about zero weight percent beta silicon nitride.

75 (New) The ceramic body of claim 73 wherein the SiAlON ceramic body further includes an intergranular phase comprising one or more of a glassy phase and an intergranular crystalline phase.

76. (New) A process for making a SiAlON ceramic containing a two phase composite comprising an alpha prime SiAlON phase that contains ytterbium and a beta prime SiAlON phase, the process comprises the steps of:

blending together a starting powder mixture comprising at least about 70 weight percent silicon nitride powder wherein the silicon nitride powder contains between greater than or equal to about zero weight percent and less than or equal to about 1.6 weight percent beta silicon nitride, ytterbium oxide powder, and a powder containing aluminum and one or more of nitrogen and oxygen;

densifying the powder mixture into the SiAlON ceramic wherein the SiAlON ceramic has a content of the alpha prime SiAlON phase greater than in a comparable SiAlON ceramic, and the beta prime SiAlON phase grains are generally more elongated than in the comparable SiAlON ceramic; and

wherein the comparable SiAlON ceramic is the result of blending together a comparable starting powder mixture identical in composition to the starting powder mixture except that the silicon nitride powder in the comparable starting powder mixture contains 2 weight percent or more beta silicon nitride, and comparably densifying the comparable starting powder mixture into the comparable SiAlON ceramic in a fashion identical to the densifying step.

77. (New) The process according to claim 76 wherein the silicon nitride starting powder contains about zero beta silicon nitride.